

**AC-225**

Advanced Scalable Networked Access Controller

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*Hardware Installation and User Guide*



July 2007

**ROSSLARE**  
SECURITY PRODUCTS



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## **1. Introduction**

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AC-225, AC-225IP and AC-225U access control panels are state-of-the-art networked access controllers, employing the latest technology to meet the requirements of the market.

When used in combination with Rosslare's VeriTrax software system, the AC-225 gives you full control over access to your premises. The system can control both single and double door entrances, supports up to 30,000 users and uses flash memory to enable easy firmware upgrades.

For more information on the VeriTrax AS-225 system, refer to the VeriTrax Access Control System User Guide.

The AC-225 consists of the following components:

- AC-225 controller board
- Panel enclosure
- PS-14 power supply
- Power Transformer (not included with the AC-225U)

The AC-225IP also includes on-board support for communications across a TCP/IP network.

The AC-225U is for US installations. It has been approved by UL for use as a stand-alone unit only.

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## 1.1 Features

The AC-225 is a powerful and adaptable access control solution with a range of powerful features.

- Controls 1 or 2 doors (DIP switch controlled)
- Two IN/OUT readers, with tamper switch and LED control
- Four inputs, selectable as supervised or non-supervised
- Four relay outputs (rated 5A)
- Optional MD-IO84 with an additional 4 relay outputs and 8 inputs, selectable as supervised or non-supervised
- Built-in sounder generator for chime, bell and siren signals
- Panel configuration DIP switch
- Up to 32 access control panels in every network (64 doors in every network)
- 30,000 users
- 20,000 log events
- RS-232 or RS-485 serial communication (up to 115200 bps)
- 32 panels networked along one serial line (RS-485 only)
- On-board TCP/IP communication (AC-225IP only)
- Remote firmware upgrades
- Removable terminal blocks

## 1.2 VeriTrax AS-225

The VeriTrax AS-225 software system is custom designed to set-up, manage and supervise all aspects of an access panel network.

It offers the following capabilities:

Users capacity	30000
Unauthorized Users	30000
Access groups	30000
Number of panels in system	1023
Number of doors in system	2046



### Note:

These options are software and firmware dependent, and may change in later releases or revisions.

### **Client-Server Structure**

VeriTrax AS-225 operates through a dedicated VeriTrax server computer, which communicates with the access control panels and can serve an unlimited number of network clients.

The server also runs the system's SQL database, which contains settings and definitions for access control across the entire facility. Clients can define new employees and control access permissions. The system includes tools for database backup, input and export of previous configurations and automatic backing-up on a periodic basis.

VeriTrax AS-225 supports all panel types and offers scalability and flexibility in addition to a range of advanced control features.

### **Configurable Links**

The system's configurable links model makes it possible to trigger any chosen output automatically or report a configurable alarm, based on a selected input. This allows easy integration with other access systems such as intruder alarms, CCTV systems and elevator controls.

VeriTrax AS-225 can also define a selected set of operations (defined in configurable links) when a panel registers a specified user or group of users. This can be useful, for example, in elevator control systems. The system can assign users with counters, allowing a limited number of entries to each panel.

### **Fingerprint Recognition**

VeriTrax can share user details with Rosslare's BioTraxNet software system. The BioTraxNet system can then download all selected users information to an AYC-W6500 fingerprint reader.

## 2. Technical Specifications

### Electrical Characteristics

<b>Operating Voltage</b>	12V DC 0.5A from PS-14
<b>Maximum Input Current</b>	AC-225: Standby: 80mA Maximum: 325mA
	AC-225IP: Standby: 120mA Maximum: 370mA
<b>General Inputs</b>	4 supervised high impedance inputs. (12 supervised inputs when used with the optional MD-IO84 I/O expansion board) Maximum voltage: 5V DC
<b>Relay Outputs</b>	4 Relay outputs (8 outputs when used with the optional MD-IO84 I/O expansion board) 5A Relay N.O. and N.C. options
<b>Reader Ports</b>	2 Reader ports Output voltage: 12V DC Max. Current: 300mA LED control output D0/D1, tamper input
<b>Visual Indicators</b>	11 LEDs
<b>Audio</b>	Built in sounder (bell, chime and siren)



Communication Characteristics

RS-232	Terminal Block
RS-485	Molex and Terminal Block
TCP/IP	On-board RJ-45 connector (AC-225IP only)
Speed Options	9600 bps 19200 bps 57600 bps 115200 bps
Reader	2 reader ports
Output voltage	12V

Environmental Characteristics

Operating Temperature Range	32°F - 120°F (0°C - 49°C)
Operating Humidity	0 - 90% (Non-condensing)

Dimensions

Height x Width x Depth	10.4 x 13.2 x 3.4 inch 264 x 334 x 84.5 mm
Weight	AC-225    8.38 lbs. (3.80 Kg) AC-225IP   8.40 lbs. (3.81 Kg) AC-225U   5.95 lbs. (2.70 Kg)

Transformer

AC Transformer	120/220V AC/16V AC 2.5A (40VA) Class 2 (not included with AC-225U)
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### Power Supply Specifications

Input Voltage	16V AC / 2.5A
From Transformer - Output Voltage 1	13.8V/300mA
From Transformer - Backup Battery Charger	12VDC Lead Acid battery up to 7A/H
From Transformer - Output Voltage 2	12V DC / 0.5A
Access control panel - Output Voltage 3	12V DC / 1.5A

### Power Supply Indication

Tamper Output (open collector)	Indicates faulty power
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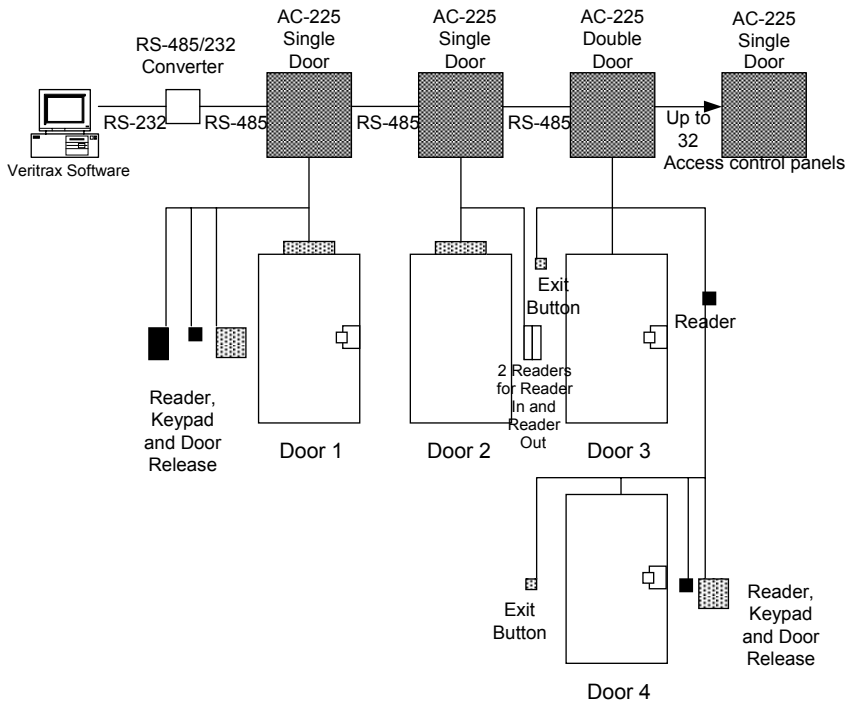
### Power LEDs

Power In (AC) Green LED1	Main power
Power Out (DC) Red LED2	Low voltage
Charger (BAT) Red LED3	Backup battery low voltage

### 3. AC-225 Panel Set-Up

Every AC-225 panel controls one or two doors. The panels connect together in a network and are controlled by a central server computer, running the AS-225 VeriTrax software system.

The following diagram shows an example set-up for a network of AC-225 access control panels.



**Figure 2: Sample AC-225 Configuration**



The following diagram illustrates wiring for two main types of 12VDC electrical release mechanisms. Other electrical devices can be switched using the voltage free relay contacts.



### **3.4 Power Supply**

The following diagram illustrates wiring between the PS-14 power supply and the AC-225. It is recommended to add a 12VDC lead acid backup battery if the main power supply fails. If the main output is 12VDC, wire it to the PS-14. Otherwise support your power supply according to the output requirements. For further information refer to the Outputs section on page 24.

AC-225 Hardware Installation and User Guide

### 3.5 Reader

Proximity & keypad readers are supplied with a limited cable. The color of the cable cover represents the cable's function.



**Note:**

When extending the cable distance, be careful with the color of the cable cover.

Refer to the reader specifications for the maximum cable length (typically 150m with an 18 AWG cable).



**Figure 7: Reader Wiring**

### 3.6 MD-IO84

The MD-IO84 is an optional I/O expansion board which adds four relay outputs and eight supervised inputs to an Access Control Panel. Attach the MD-IO84 to the AC-225's expansion slot. For more information, see the MD-IO84 Installation and User Guide.



# 4. Input and Output Requirements

This chapter describes the AC-225 access control panel's input and output requirements.

## 4.1 Input Types

There are four input types – Normally Open, Normally Closed, Normally Open Supervised 1 or 2 resistors, and Normally Closed Supervised 1 or 2 resistors.

Inputs IN1, IN1A, IN2 and IN2A may be configured individually as either supervised or non-supervised inputs. Configure each input separately via the VeriTrax AS-225 system.

Non-supervised inputs have two states:

- Normal State
- Abnormal State

Supervised inputs have three states:

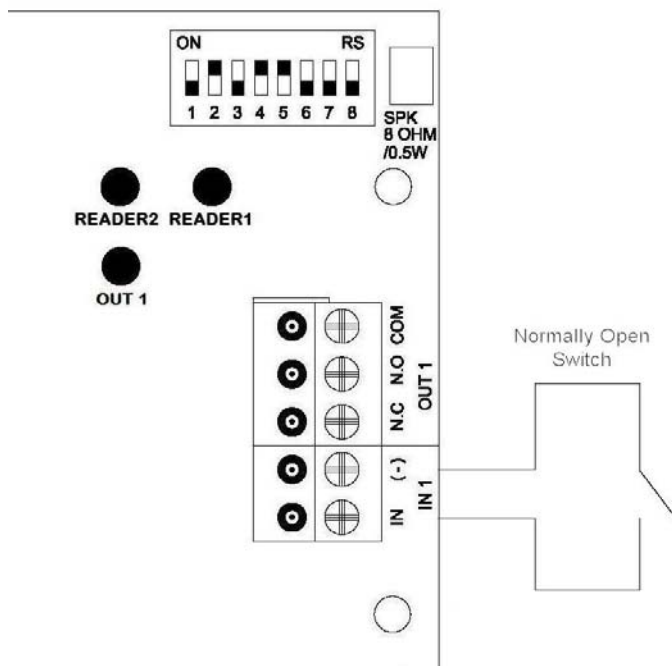
- Normal State
- Abnormal State
- Trouble State.

The Trouble state is caused by either tampering with the input circuit or by faulty hardware installation. Once configured as supervised input, add a resistor of 2.2K, of 8.2K or both on the input circuit. See the following diagrams.

### Normally Open Input Connection:

Normally Open Input has 2 states:

- Switch Open - Normal State:  
Loop resistance = Infinite (open circuit).
- Switch Closed – Abnormal State:  
Loop resistance = 0 (short circuit).



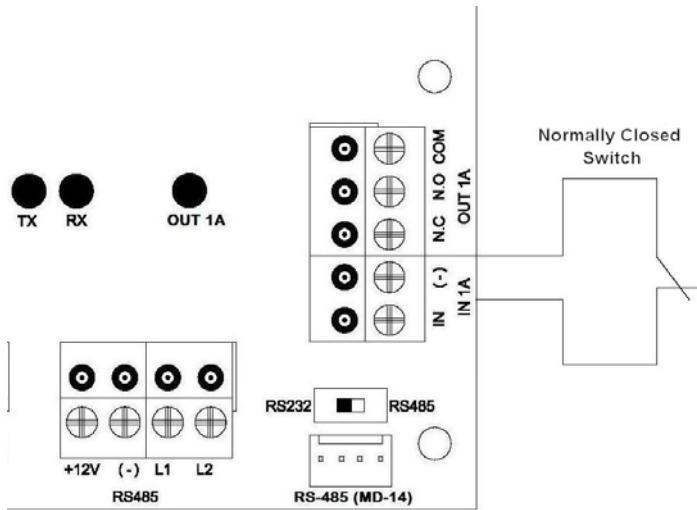
**Figure 8: Normally Open Input Connection**

## Input and Output Requirements

### Normally Closed Input Connection:

Normally Closed Input has two states:

- Switch Closed - Normal State:  
Loop resistance = 0 (short circuit).
- Switch Open – Abnormal State:  
Loop resistance = Infinite (open circuit).



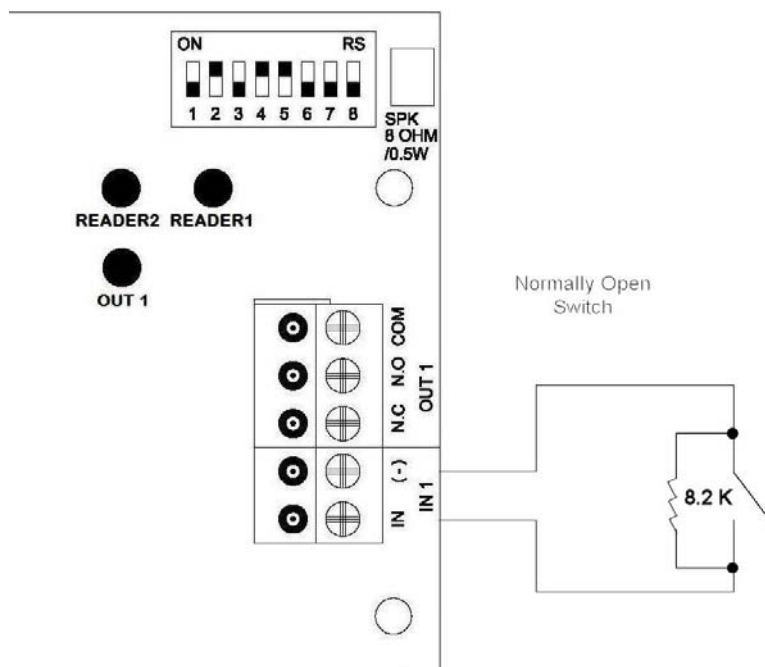
**Figure 9: Normally Closed Input Connection**

### Normally Open Supervised Single Resistor Input Connection

Connect an 8.2K resistor in parallel to the input switch contacts.

Normally Open Supervised Input has 3 states:

- Switch Open - Normal State:  
Loop resistance = 8.2K.
- Switch Closed – Abnormal State:  
Loop resistance = 0 (short circuit).
- Open circuit across input terminals - Trouble State:  
Loop resistance = Infinite (open circuit).



**Figure 10: Normally Open Supervised Input (Single Resistor)**

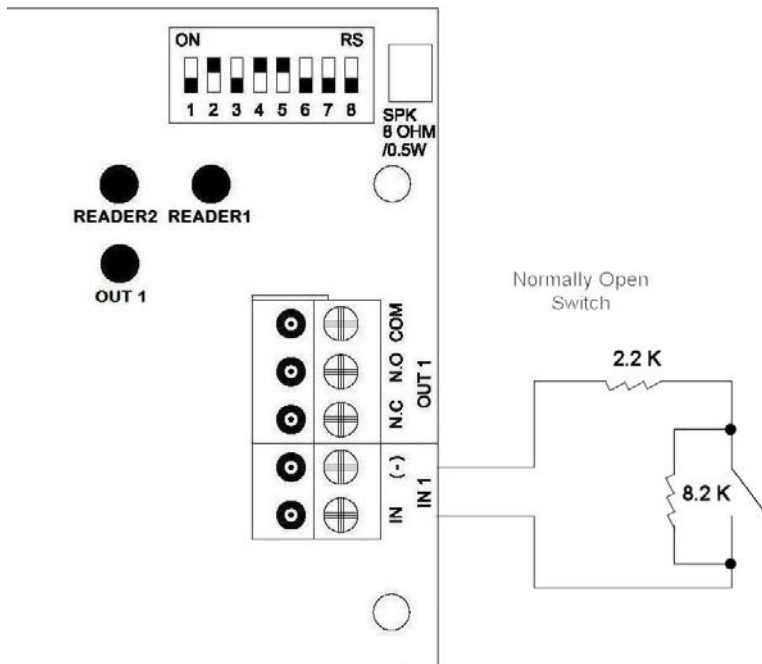
## Input and Output Requirements

### Normally Open Supervised Double Resistor Input Connection

Connect a 2.2K resistor in series to the input switch contacts.  
Connect an 8.2K resistor parallel to the input switch contacts.

Normally Open Supervised Input has 3 states:

- 1) Switch Open - Normal State:  
Loop resistance = 10.4K.
- 2) Switch Closed – Abnormal State:  
Loop resistance = 2.2K.
- 3) Open circuit (Infinite loop resistance) or short circuit (0 resistance) across input terminals - Trouble State.



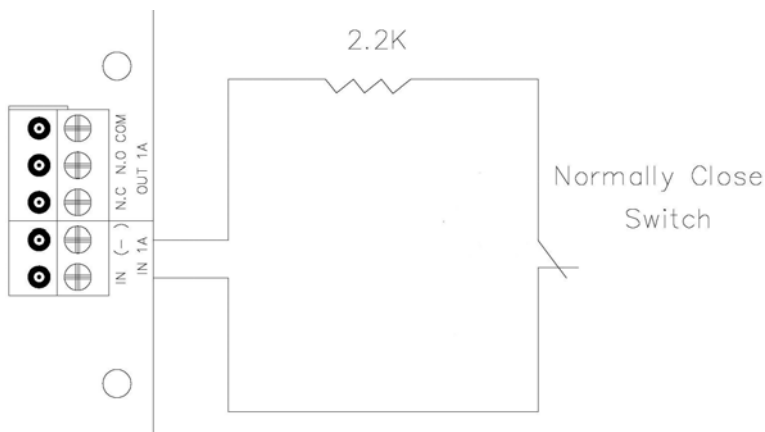
**Figure 11: Normally Open Supervised Input (Double Resistor)**

### Normally Closed Supervised Single Resistor Input Connection

Connect a 2.2K resistor in series to the input switch contacts.

Normally Closed Supervised Input has 3 states:

- Switch Closed - Normal State:  
Loop resistance = 2.2K.
- Switch Open – Abnormal State:  
Loop resistance = Infinite (open circuit).
- Short circuit across input terminals - Trouble State:  
Loop resistance = 0 (short circuit).



**Figure 12: Normally Closed Supervised Input (Single Resistor)**

### Normally Closed Supervised Double Resistor Input Connection

Connect a 2.2K resistor in series to the input switch contacts.

Connect an 8.2K resistor parallel to the input switch contacts.

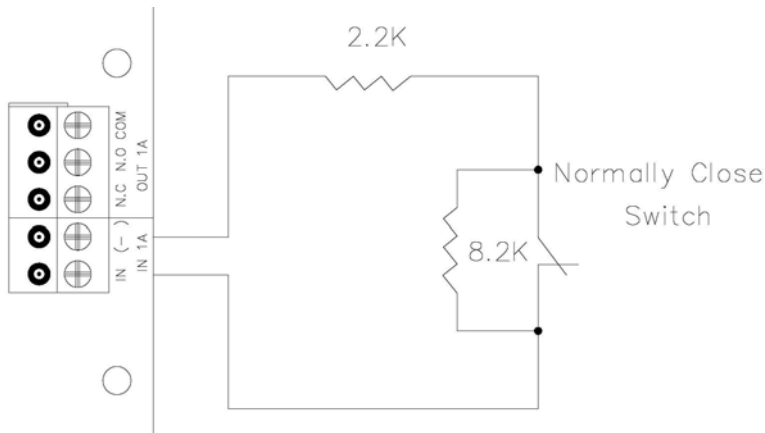
Normally Closed Supervised Input has 3 states:

- Switch Closed - Normal State:  
Loop resistance = 2.2K.
- Switch Open – Abnormal State:  
Loop resistance = 10.4K.

## Input and Output Requirements

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- Open circuit (Infinite loop resistance) or short circuit (0 resistance) across input terminals - Trouble State.



**Figure 13: Normally Closed Supervised Input (Double Resistor)**

## 4.2 Inputs Description

### Request to Exit Button (REX) Input

Use the REX Input to open a door directly. The following should be defined:

**Single door controller:** Door 1 – IN 1

**Double door controller:** Door 1 – IN 1  
Door 2 – IN 2

Typically, the REX input is connected to a Normally Open push button that is located inside the premises. The push button is generally located in an easy-to-access position and opens a door without reading a proximity card or PIN code.

### Door Monitor Input

The Door Monitor Input typically connects to a Normally Closed door sensing micro-switch for door status monitoring. The following should be defined:

**Single door controller:** Door 1 - IN1A

**Double door controller:** Door 1 - IN 1A  
Door 2 - IN 2A

The panel can generate two warning conditions:

- Forced alarm: When the door is forcibly opened by unauthorized persons
- Door held open alarm: When the door is open for a period exceeding the lock strike programmed open time

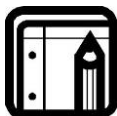


#### Note:

Warning conditions are governed by the software set-up. See the "VeriTrax Access Control System User Guide" for more details.

After the access control panel enables access, the lock is activated according to its programmed time until one of the following occurs:

- The access control panel stops lock activation immediately after the door opens
- The access control panel waits for the door to close (this can help to reduce tailgating)



#### Note:

Lock activation is governed by the software set-up. See the "VeriTrax Access Control System User Guide" for more details.

When the door open time period is over, the access control panel ends lock activation.



## Input and Output Requirements

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### General Purpose Inputs

These are free inputs that can be used for various functions. The following should be defined:

<b>Single door controller:</b>	Door 1 – IN 2 Door 1 – IN 2A
<b>Double door controller:</b>	(no general purpose inputs available)

General purpose inputs are suitable for most uses. For example, they might be used to detect tampering, to activate alarm sensors or for monitoring power supply failure.

General purpose inputs are activated when the panel is opened.



#### Note:

When fitting the AC-225U, the internal tamper switch must be connected to a UL Listed burglary unit. Refer to the UL Listed burglary unit for connection instructions.

### 4.3 Outputs

RossIare Security recommends the use of suppression diodes for all outputs that will be connected to inductive loads and activated by DC current, such as Magnetic Lock ("Maglock") or door strike devices.

Each suppression diode should be connected near its inductive load. Be careful to attach the diode's cathode to be tied to the +V terminal of the load. Attach the diode's anode to the -V terminal.

#### Door Lock

There are two types of door locking devices:

- Fail open (fail secure)
- Fail close (fail safe)



### Note:

The user can select either "Normally Open" or "Normally Closed" output contacts.

The following should be defined:

**Single door controller:** Door 1 – OUT1

**Double door controller:** Door 1 – OUT1  
Door 2 – OUT2

The output can sink current from any power supply (see page 13).

An AC-225U output can provide 12 VDC power up to 1.5 A for external door locks. For higher rated door locks an external UL 294 Listed power supply must be used to provide power to the door lock.

This restriction does not affect standard AC-225 models.



### Note:

For UL installations, the installer must configure the system as fail-safe to comply with NFPA (National Fire Protection Association) regulations.

## 4.4 Card Readers and Keypads

Each access control panel can be connected to a maximum of two readers. There are three available types of reader:

- Card readers
- Keypads
- Combined card and keypad readers

A keypad is required for any reader mode that requires PIN code entries, such as "Card or PIN", "PIN Only" or "Card and PIN (Secured mode)".

When connecting a reader, the following should be defined:

## Input and Output Requirements

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<b>Single door controller:</b>	Door 1 – Reader 1 IN/OUT Door 1 – Reader 2 IN/OUT
<b>Double door controller:</b>	Door 1 – Reader 1 IN/OUT Door 2 – Reader 2 IN/OUT

Use the VeriTrax AS-225 software to set the readers for IN or OUT use and to set the data transmission format for each reader.

The reader's tamper output connects to the access control panel's Reader-Tamper input. If the reader is interfered with, an alarm can be generated.

The panel's Reader G.LED output activates the reader's green LED input when operating in "Card and PIN" secure mode. While this mode is in force, users must enter a PIN on the keypad immediately after entering the card.

The controller activates the LED control for 2 seconds when an access granted event occurs.

## 5. AC-225 Hardware Settings

Each AC-225 panel controls an entrance. The behavior of the panel is controlled by DIP switch settings.

Select the appropriate DIP switch setting to operate the panel as either a single or double door. See below

Access Control Panel Type, page 29.

Access control panels configured as single door controllers have two readers, IN or OUT.

<b>Outputs</b>	Door Lock output	(OUT 1)
	General purpose output	(OUT 1A)
	General purpose output	(OUT 2)
	General purpose output	(OUT 2A)
<b>Inputs</b>	Request to exit	(IN 1)
	Door monitor input	(IN 1A)
	General purpose input	(IN 2)
	General purpose input	(IN 2A)

Access control panels configured as double door controller have two readers, IN or OUT.

<b>Outputs</b>	Lock output for Door 1	(OUT 1)
	General purpose output	(OUT 1A)
	Lock output for Door 2	(OUT 2)
	General purpose output	(OUT 2A)
<b>Inputs</b>	Request to exit for Door1	(IN 1)
	Monitor input for Door 1	(IN 1A)
	Request to exit for Door2	(IN 2)
	Monitor input for Door 2	(IN 2A)

### 5.1 DIP Switch Configuration

The access control panel DIP switch controls a number of operating parameters including the device address and baud rates for serial communication.

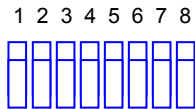


Figure 14: DIP Switch

The following is a list of DIP switch numbers and their functions:

DIP Switch	Function
1	The panel's communication baud rate.
2	
3	The panel type: single door controller or double door controller.
4	The access control panel's VeriTrax-network address.
5	
6	
7	
8	

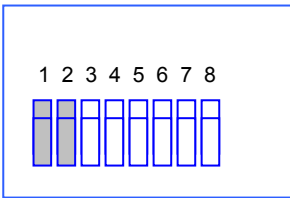


**Note:**  
Power down the access control panel before changing the DIP switch settings.  
After changes have been made, restart the panel. The new settings are automatically defined after power up.

### 5.2 Access Control Panel Baud Rate

The Access control panel serial port baud rate, set in dip switches one and two, defines the communication speed for connecting with a PC in a network connection.

The default baud rate is set to 9600 bits per second.



**Figure 15: DIP Switch with Baud Rate Setting**

The following lists switch 1 and 2 status and baud rate:

Switch 1	Switch 2	Baud Rate
Off	Off	9600
Off	On	19200
On	Off	115200
On	On	57600



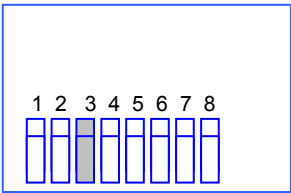
**Note:**

The access control panel baud rate must be identical to the host computer's serial port baud rate.

### 5.3 Access Control Panel Type

The Access control panel type is defined using the third DIP switch. Set the panel to operate as either a single or double door controller.

The default access control panel setting is for a single door controller.



**Figure 16: DIP Switch with Single Door Setting**

- **Off** - defines single door controller
- **On** - defines a double door controller

### Single Door Controller

This access type has two readers, IN and OUT, as follows:

<b>Outputs</b>	Door lock strike
	General purpose output
	General purpose output
	General purpose output
<b>Inputs</b>	Release to exit
	Door monitor input
	General purpose input
	General purpose input

**Note:**

For more information, refer to Input and Output Requirements on page 16.

### Double Door Controller

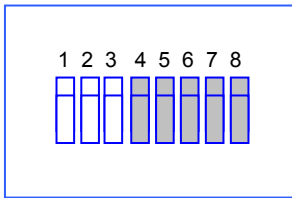
This access type has two readers, IN and OUT, as follows:

<b>Outputs</b>	Door 1 lock strike
	General purpose output
	Door 2 lock strike
	General purpose output
<b>Inputs</b>	Release to exit door1
	Door 1 monitor input
	Release to exit door 2
	Door 2 monitor input

## 5.4 Access Control Panel Addressing

The last 5 DIP switches are used to select the binary coded access control panel internal network address.

The default access control panel address is "1".



**Figure 17: DIP Switch with Internal Network Address Setting**



**Note:**

For successful communications, the DIP switch must match the address set in the VeriTrax AS-225 software.

The following table displays the 32 dip switch settings available:

Address	Switch 4	Switch 5	Switch 6	Switch 7	Switch 8
1	Off	Off	Off	Off	Off
2	Off	Off	Off	Off	On
3	Off	Off	Off	On	Off
4	Off	Off	Off	On	On
5	Off	Off	On	Off	Off
6	Off	Off	On	Off	On
7	Off	Off	On	On	Off
8	Off	Off	On	On	On
9	Off	On	Off	Off	Off
10	Off	On	Off	Off	On
11	Off	On	Off	On	Off
12	Off	On	Off	On	On
13	Off	On	On	Off	Off
14	Off	On	On	Off	On
15	Off	On	On	On	Off
16	Off	On	On	On	On
17	On	Off	Off	Off	Off



18	On	Off	Off	Off	On
19	On	Off	Off	On	Off
20	On	Off	Off	On	On
21	On	Off	On	Off	Off
22	On	Off	On	Off	On
23	On	Off	On	On	Off
24	On	Off	On	On	On
25	On	On	Off	Off	Off
26	On	On	Off	Off	On
27	On	On	Off	On	Off
28	On	On	Off	On	On
29	On	On	On	Off	Off
30	On	On	On	Off	On
31	On	On	On	On	Off
32	On	On	On	On	On

## 6. Communications

Communication lines are used to upload and download information between the access control panel and the VeriTrax AS-225 software. When the access control panel and the computer are communicating, the system's two LEDs flash accordingly.

- The RX LED flashes when the controller receives data
- The TX LED flashes when the controller transmits data

**Note:**

The access control panel address is defined in the VeriTrax AS-225 software.

It is important that the DIP switch and the software are set to the same address.

There are three connection modes:

- Serial Network (RS-232 or RS-485)
- Modem Network
- TCP/IP Network

### 6.1 Serial Network Connection

The computer serial port controlling the access control panel is set from within the VeriTrax AS-225 software. The default is 9600bps for direct connection to the computer.

When using an RS-232 connector, only one access control panel can be linked to each communication port on the computer. Use an RS-485 if you wish to connect more than one panel on one communication port.

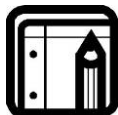
**Note:**

The J1 switch must be in the correct position to select the RS-232 communication.

### RS-232 Connection to the Computer

Set the J1 switch to the RS-232 position.

Access control panel	DB9 Connector	DB25 Connector
GND	Pin 5	Pin 7
Tx	Pin 2	Pin 3
Rx	Pin 3	Pin 2

**Note:**

The RS-232 connection can only connect a single access control panel to the computer.

The distance between the computer and the access control panel must be no more than 150 feet (50 meters).

If the baud rate is increased to 57600 or beyond, the distance must be no more than 30 feet (10 meters).

### RS-485 Connection to the Computer

Set the J1 switch to the RS-485 position.

Up to 32 access control panel's can be linked together and connected to a single communication port on the computer.

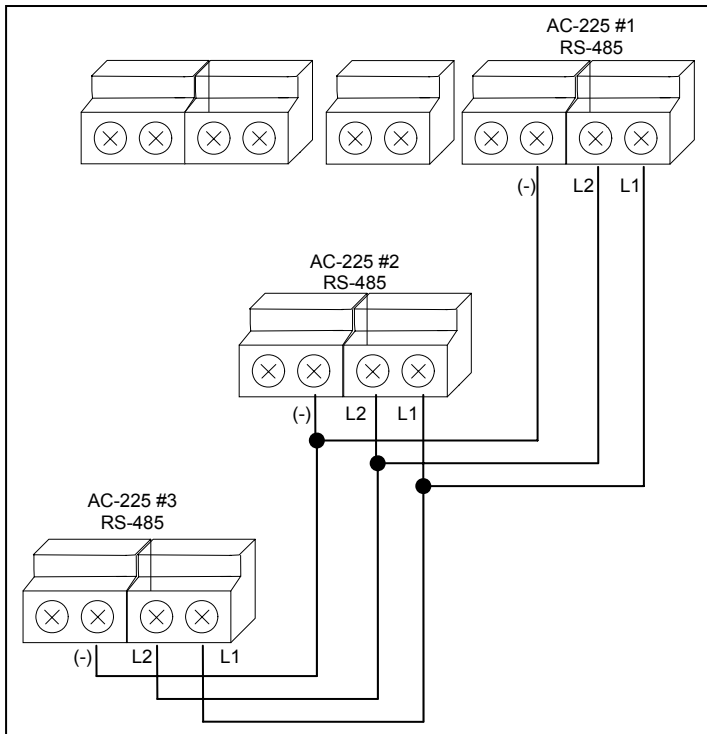
Use the RS-485 interface for situations where there will be multiple controllers connected. The serial port used to control the access control panel is assigned within the VeriTrax AS-225 software.

The Access control panel supports the two-wire RS-485 interface. RS-485 interface enables the distance between the Access control panel and PC to be extended up to 4000 feet (1300) meters. The data line wiring must be in daisy chain formatting with one control unit following another. The first Access control panel connecting to the PC must use the MD-14 RS-485 to RS-232 adaptor.

## Daisy Chaining

Daisy chaining allows many panels to connect to the computer along a single serial line.

The first panel is connected directly to the computer and a second panel connects to the first panel. Additional panels connect in the same way, one after another.



**Figure 18: Daisy Chaining**

At each end of the data line, both where the panel connects to the computer and on the last panel in the network, a termination resistor of  $120\Omega$  may be required. Apply the resistor across the L1 and L2 connections.

These termination resistors are especially important in long cable runs.

### 6.2 TCP/IP Network Connection

The computer running the VeriTrax AS-225 software can communicate with the access control panels via a TCP/IP network. The connection settings are controlled within the VeriTrax AS-225 software.

AC-225IP panels connect to the TCP/IP network (LAN or WAN) directly, using an on-board network module. When an access control panel network is connected using RS-485, up to 32 panels can be connected on each TCP/IP network, This means that one AC-225IP panel can support up to 31 AC-225 panels.

To connect to a TCP/IP network using other AC-225 models, add Rosslare's MD-N32 TCP/IP to RS-232 gateway converter.



#### Note:

For more information on operating an MD-N32, refer to the MD-N32 User Manual.

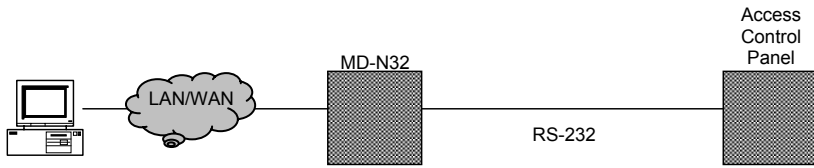
### LAN and WAN Requirements

The devices can be connected to a TCP/IP network using any valid network address.

Use a TCP/IP connection when a LAN network already exists and the long RS-485 network is not required. The following schematic illustrates the connection of a single AC-225 to a computer via a LAN network.

When the TCP/IP connection is implemented over a Wide Area Network (WAN) it becomes possible to connect through the Internet. This makes it possible to control multiple access control panels worldwide, all from a single computer.

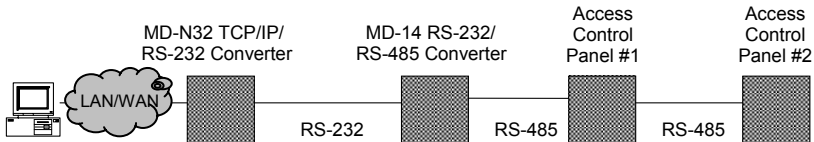
Before connecting a panel by TCP/IP connection for the first time, the VeriTrax AS-225 software must configure the device. Settings will then remain stored in non-volatile memory on the device, See Software manual configuring instructions.



**Figure 19: MD-N32 Configuration connecting a single panel**

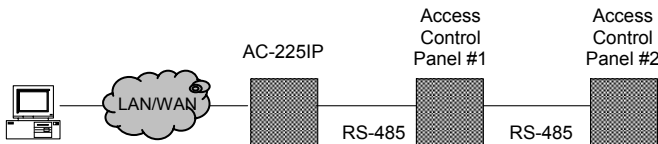
When using an MD-N32, for a single panel, either an RS-232 cable or Rosslare's MD-14 RS-485 converter can be used.

To connect an MD-N32 to more than one panel (up to 32 panels), Rosslare's MD-14 RS-485 converter must be used. Connect the MD-14 between the RS-485 access control panel network and the MD-N32 converter.



**Figure 20: Connecting Multiple Access control panels with MD-N32**

The MD-14 is not required when using the AC-225IP.



**Figure 21: Connecting Multiple Access control panels with AC-225IP**



**Note:**

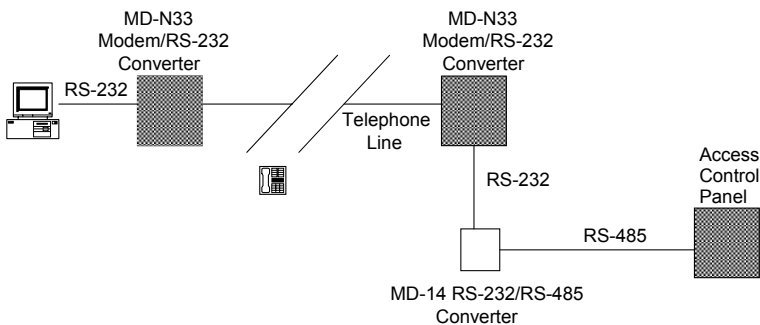
For more information on operating an MD-N32, refer to the MD-N32 User Manual.

### 6.3 Modem Network Connection

Access control panels can be controlled from the computer's modem. The modem is assigned from within the VeriTrax AS-225 software.

Use a modem when the access control panel is too far from the computer to use a serial connection and an alternative RS-232/RS-485 network or TCP/IP network is unavailable.

The following diagram illustrates remote site modem configuration with AC-225.



**Figure 22: Remote Site Modem Configuration**



**Note:**

For more information on modem connections, refer to the MD-N33 User Manual and the AS-225 software manual.

### Hardware Requirements

- 2 Standard Telephone cables – RJ11 plugs in both sides
- Crossed 9 pin RS-232 cable (female jack on both sides)
- Rosslare MD-14 (RS-232 to RS-485 converter)
- 2 Rosslare MD-N33 (Modem to serial gateway)
- Rosslare AC-225 panel

## Prerequisites

Before performing permanent modem installations, the modem that will be connected to the panel must be initialized from the computer running the VeriTrax software.

**Note:**

The telephone numbers shown in the examples below are for **illustration purposes** only.

## Computer Connections

The MD-N33 must connect to the computer via a serial port.

### To connect to the PC:

1. Connect a 9VDC adapter to the first MD-N33. Make sure that the power LED (Red) is on.
2. Connect the PC, using an available COM port, to the MD-N33 with **cross serial cable**.
3. Connect the MD-N33's RJ11 jack to the telephone line using the telephone cable.

## AC-225 Panel Connections

1. Connect a 9VDC adapter to the second MD-N33. Make sure that the power LED (Red) is on.
2. Connect the MD-N33's RJ11 jack to the telephone wall mount using the telephone cable.
3. Connect the MD-N33 DB9 female jack to the MD-14 DB9 female jack.
4. Connect the AC-225 RS-485 outlet to the MD-14 4 wires cable. Make sure the J1 switch (on the AC-225) is set to RS-485 Mode.

**Note:**

Up to 32 panels can be connected on this RS-485 network.



### Appendix A. Limited Warranty

ROSSLARE ENTERPRISES LIMITED S (Rosslare) TWO YEARS LIMITED WARRANTY is applicable worldwide. This warranty supersedes any other warranty. Rosslare's TWO YEARS LIMITED WARRANTY is subject to the following conditions:

#### **Warranty**

Warranty of Rosslare's products extends to the original purchaser (Customer) of the Rosslare product and is not transferable.

#### **Products Covered By This Warranty and Duration**

ROSSLARE ENTERPRISES LTD. AND / OR SUBSIDIARIES (ROSSLARE) warrants that the AC-225 Access Control Panel, to be free from defects in materials and assembly in the course of normal use and service. The warranty period commences with the date of shipment to the original purchaser and extends for a period of 2 years (24 Months).

#### **Warranty Remedy Coverage**

In the event of a breach of warranty, ROSSLARE will credit Customer with the price of the Product paid by Customer, provided that the warranty claim is delivered to ROSSLARE by the Customer during the warranty period in accordance with the terms of this warranty. Unless otherwise requested by ROSSLARE ENTERPRISES LTD. AND / OR SUBSIDIARIES representative, return of the failed product(s) is not immediately required.

If ROSSLARE has not contacted the Customer within a sixty (60) day holding period following the delivery of the warranty claim, Customer will not be required to return the failed product(s). All returned Product(s), as may be requested at ROSSLARE ENTERPRISES LTD. AND /OR SUBSIDIARY'S sole discretion, shall become the property of ROSSLARE ENTERPRISES LTD. AND /OR SUBSIDIARIES.

To exercise the warranty, the user must contact Rosslare Enterprises Ltd. to obtain an RMA number after which, the product must be returned to the Manufacturer freight prepaid and insured

In the event ROSSLARE chooses to perform a product evaluation within the sixty (60) day holding period and no defect is found, a minimum US\$ 50.00 or equivalent charge will be applied to each Product for labor required in the evaluation.

Rosslare will repair or replace, at its discretion, any product that under normal conditions of use and service proves to be defective in material or workmanship. No charge will be applied for labor or parts with respect to defects covered by this warranty, provided that the work is done by Rosslare or a Rosslare authorized service center.

### **Exclusions and Limitations**

ROSSLARE shall not be responsible or liable for any damage or loss resulting from the operation or performance of any Product or any systems in which a Product is incorporated. This warranty shall not extend to any ancillary equipment not furnished by ROSSLARE, which is attached to or used in conjunction with a Product, nor to any Product that is used with any ancillary equipment, which is not furnished by ROSSLARE.

This warranty does not cover expenses incurred in the transportation, freight cost to the repair center, removal or reinstallation of the product, whether or not proven defective.

Specifically excluded from this warranty are any failures resulting from Customer's improper testing, operation, installation, or damage resulting from use of the Product in other than its normal and customary manner, or any maintenance, modification, alteration, or adjustment or any type of abuse, neglect, accident, misuse, improper operation, normal wear, defects or damage due to lightning or other electrical discharge. This warranty does not cover repair or replacement where normal use has exhausted the life of a part or instrument, or any modification or abuse of, or tampering with, the Product if Product disassembled or repaired in such a manner as to adversely affect performance or prevent adequate inspection and testing to verify any warranty claim.

ROSSLARE does not warrant the installation, maintenance, or service of the Product. Service life of the product is dependent upon the care it receives and the conditions under which it has to operate.

In no event shall Rosslare be liable for incidental or consequential damages.

### **Limited Warranty Terms**

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THE TERMS OF THIS WARRANTY MAY NOT BE VARIED BY ANY PERSON, WHETHER OR NOT PURPORTING TO REPRESENT OR ACT ON BEHALF OF ROSSLARE.

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THIS WARRANTY SHALL BECOME NULL AND VOID IN THE EVENT OF A VIOLATION OF THE PROVISIONS OF THIS LIMITED WARRANTY.

## Appendix B. Technical Support

### Asia Pacific, Middle East, Africa

Rosslare Security Products Headquarters  
905-912 Wing Fat Industrial Bldg,  
12 Wang Tai Road,  
Kowloon Bay Hong Kong  
Tel: +852 2795-5630  
Fax: +852 2795-1508  
E-mail: [support.apac@rosslaresecurity.com](mailto:support.apac@rosslaresecurity.com)

### United States and Canada

1600 Hart Court, Suite 103  
Southlake, TX, USA 76092  
Toll Free: +1-866-632-1101  
Local: +1-817-305-0006  
Fax: +1-817-305-0069  
E-mail: [support.na@rosslaresecurity.com](mailto:support.na@rosslaresecurity.com)

### Europe

Global Technical Support & Training Center  
HaMelecha 22  
Rosh HaAyin, Israel 48091  
Tel: +972 3 938-6838  
Fax: +972 3 938-6830  
E-mail: [support.eu@rosslaresecurity.com](mailto:support.eu@rosslaresecurity.com)

### South America

Pringles 868, 1640 Martinez  
Buenos Aires  
Argentina  
Tel: +54 11 4798-0095  
Fax: +54 11 4798-2228  
E-mail: [support.la@rosslaresecurity.com](mailto:support.la@rosslaresecurity.com)

Web Site: [www.rosslaresecurity.com](http://www.rosslaresecurity.com)



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[www.rosslaresecurity.com](http://www.rosslaresecurity.com)

0706-0960202+00

